



REFRISAT and SWEP: Improving efficiency in aeronautical machining

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SWEP BPHEs (Brazed plate heat exchangers) have helped to enhance efficiency to REFRISAT chillers in several applications, including machines in the hospital, metal-mechanical, injection, extrusion, blowing industries, and now, the airplane manufacturing market.

Read more on [swep.net](http://swep.net)

REFRISAT is a thermal control segment expert that has offered solutions for diversified business needs for over 45 years. In addition to a standard line that largely serves the refrigeration and air conditioning market, REFRISAT has specific and customized projects for different needs as well.

### Cooling solution for aeronautical industries

Since the times of Santos Dumont, Brazil has been a force in the world of aviation. In the 1960s, the creation of a giant Brazilian aircraft manufacturer boosted technology and development in the area. This development was mainly centered in the São José dos Campos region located in the interior of the state of São Paulo.

In addition to using refrigeration equipment to carry out tests and simulations of comfort, strength and safety, thermal control is also essential in the production of aeronautical parts. REFRISAT (a Brazilian company which is part of the HBR holding group), in partnership with SWEP, has already provided many solutions for the aeronautical market.

Recently, a solution was developed for a machining process for aircraft parts, in which REFRISAT was responsible for cooling the spindles, which are very sensitive and crucial components in a precision machining center.



REFRISAT chiller



REFRISAT & SWEP equipment installed

### Machining in the aeronautical industry

When machining aerospace parts, quality and precision are of great importance as their complexities demand tight tolerances and faster cycle times which are becoming increasingly vital to the industry.

The rotation of a machining spindle can reach 35- to 45-thousand RPM and its bearings reach extremely high temperatures. To maintain accurate cuts, the spindle needs to be constantly cooled to avoid material expansion and shrinkage, which leads to thermal fatigue.

This REFRISAT chiller uses SWEP's dual BPHE as an evaporator to cool the water that goes to the machine shop, which in turn, cools the spindles – keeping the spindles running longer. With REFRISAT's experience and the optimized

solutions that SWEP BPHEs provide, together they are striving to bring a high level of efficiency and precision to the aeronautical manufacturing market.

### Why choose SWEP BPHEs for tough industrial cooling applications?

SWEP BPHEs have all the vital qualities that temperature-critical control and process & production applications demand. Robust and compact, they offer long-term reliability with minimal maintenance. Their flexible design and SWEP's ability to customize both the plate and brazing materials bring unbeatable performance and lowered total cost of ownership when compared to other technologies.